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Secure Modular Scalable Management for Rack Mount Switches

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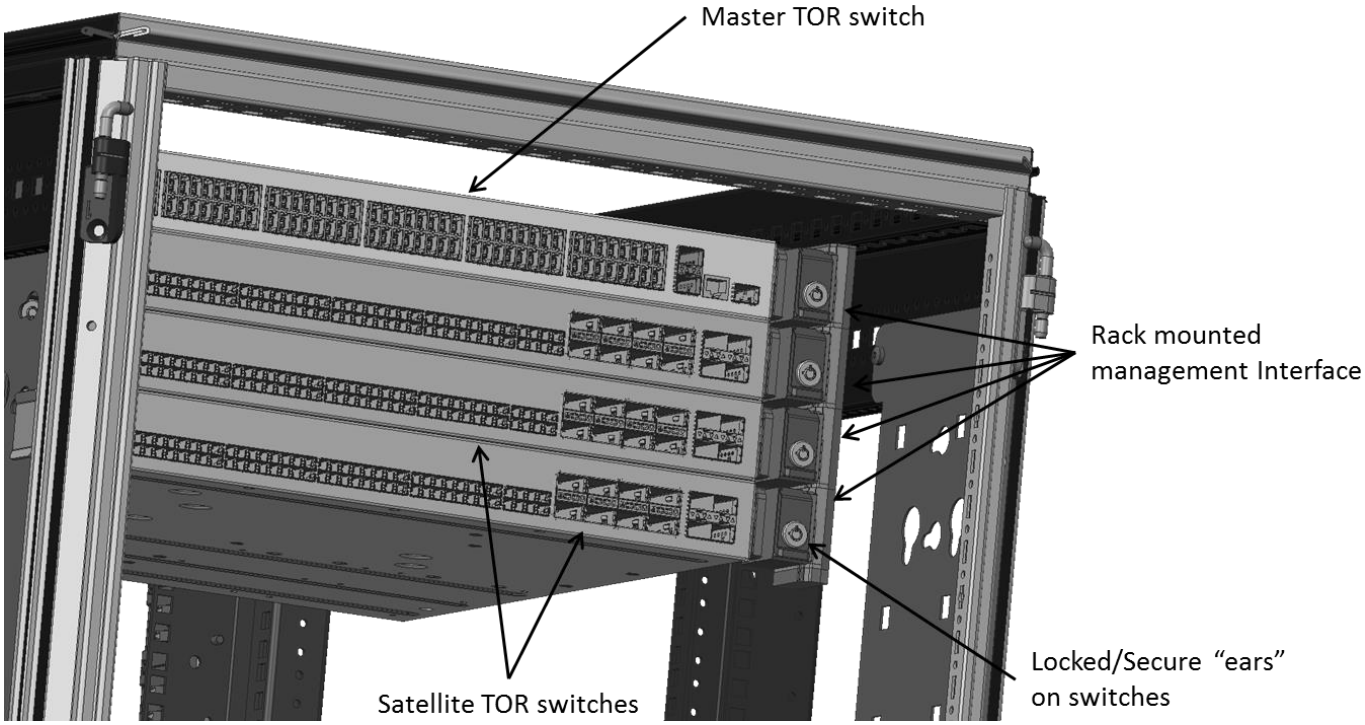
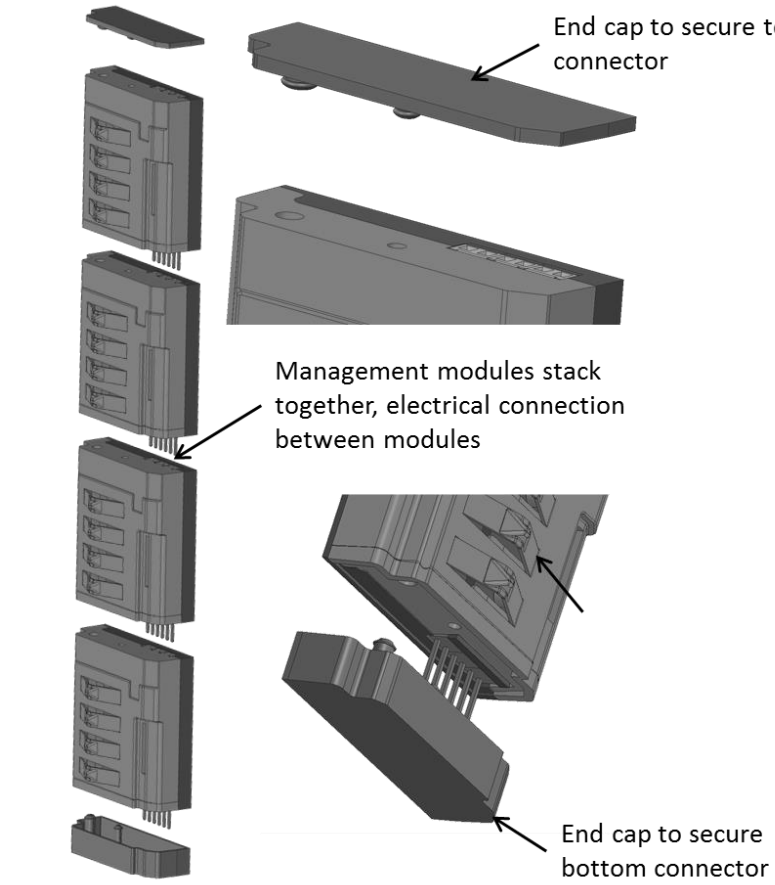
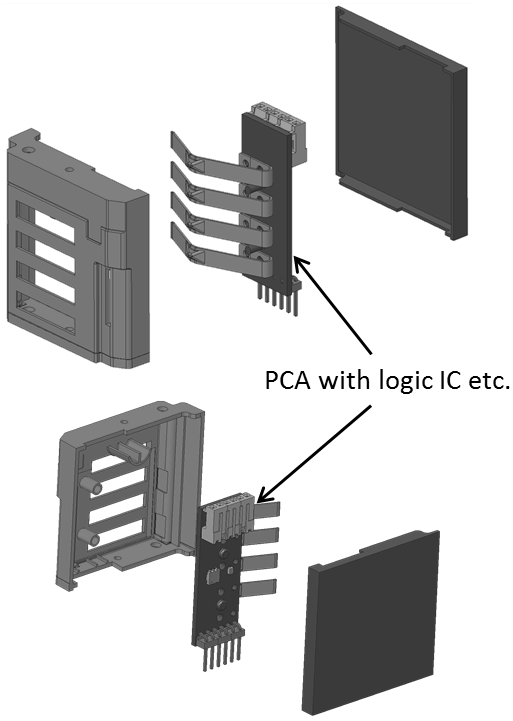
Secure Modular Scalable Management for Rack Mount Switches

Next generation rack mount switches will be required to support a higher bandwidth densities through the faceplate as switch ASICs grow in lane count. Management interfaces in switches currently take up that valuable faceplate space. In addition, the server market is looking for an ever increasing ability to scale out infrastructure and configure to specific workloads. This scalable management interface for switches is external to the switch chassis, integrated into the rack, and physically secure. The image below shows an overview of the system.

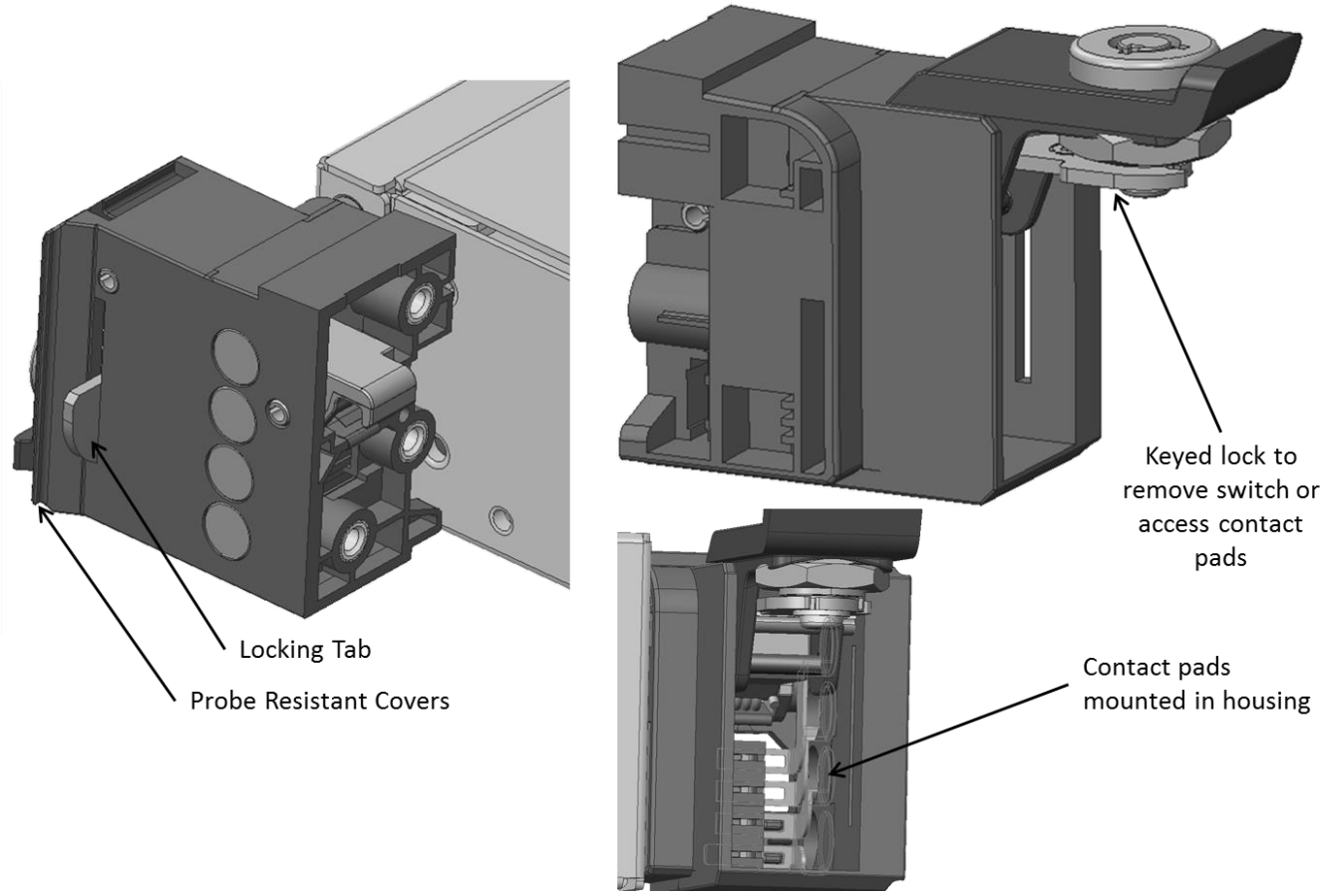


The implementation shown above consists of rack mounted 1U management modules that interlock mechanically and connect electrically between each other. External "ears" mounted to switches in the corresponding rack positions mate to contacts on the management modules.

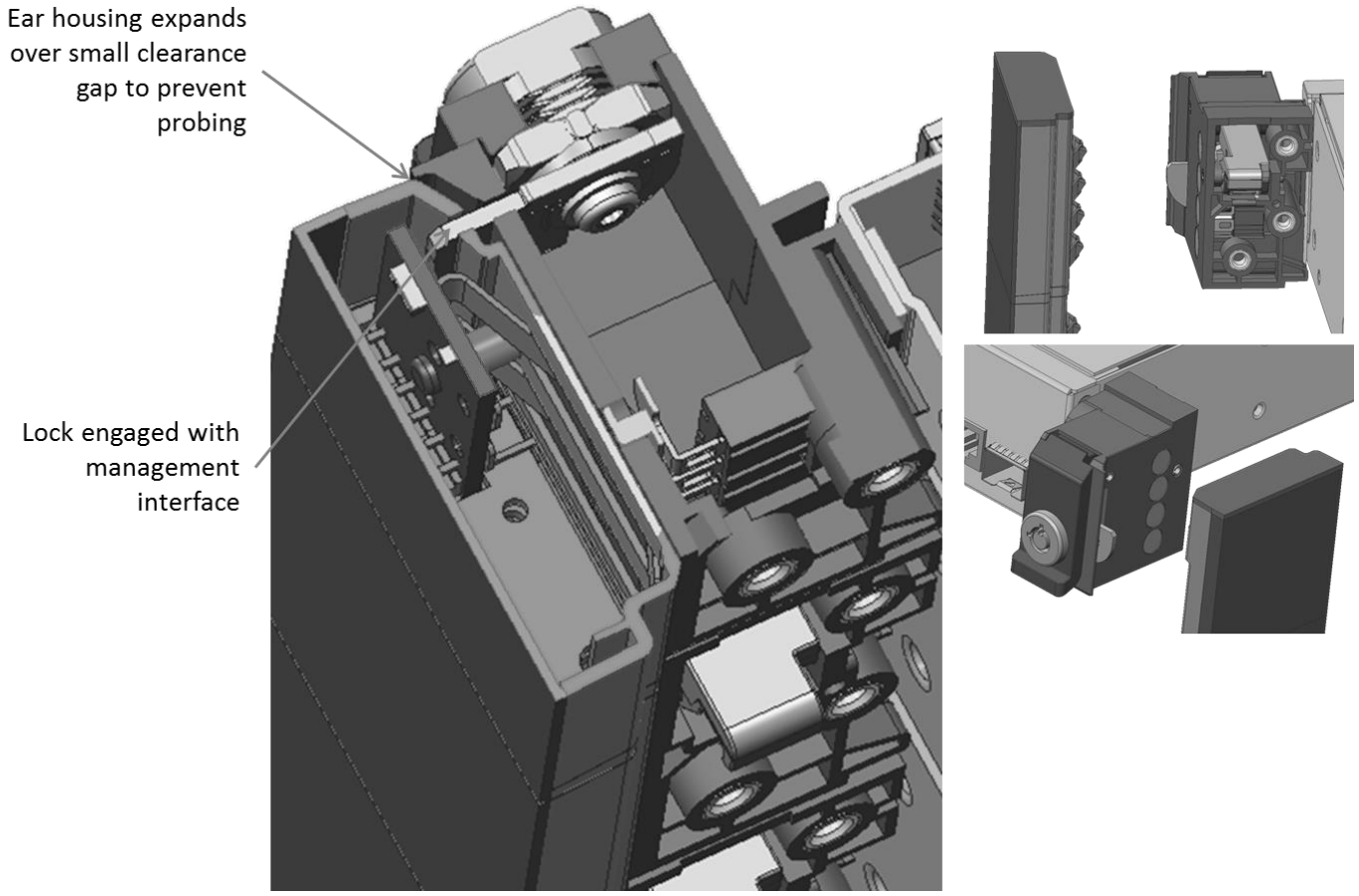

End cap to secure top connector
Management modules stack together, electrical connection between modules
End cap to secure bottom connector


PCA with logic IC etc.

The management modules, shown above, consist of a housing and PCA with management IC, logic, spring contact and connectors. The ears mounted to the side of the switch electrical mate to the management module through the spring contacts and contact pads.



In addition, management modules are equipped with a locking mechanism to prevent unauthorized access. The housing of the ears shields the clearance gap between the module and the contact area of the ears to prevent "probing" or "sniffing" of management signals. The probe resistant cover ensures secure communication across the management network. Show below, are additional images that illustrate the electrical connection between the switch and the module, as well as detailed views of the security features.



This solution is modular, thus can scale as additional switches are added to a network, simply expanding the management ring. By moving the management portion of the switch into the area in front of the rack posts/rails, valuable faceplate space is freed up for networking I/O.

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